



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,438	03/01/2004	Satoshi Yamaguchi	249443US3	1863
22850	7590	11/15/2006	EXAMINER	
C. IRVIN MCCLELLAND OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			HEINZ, ALLEN J	
			ART UNIT	PAPER NUMBER
			2627	

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/788,438

Applicant(s)

YAMAGUCHI, SATOSHI

Examiner

A. J. HEINZ

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 6,7,22 and 23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,8-21 and 24-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/1/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Art Unit: 2627

1. Applicant's election of the species of figures 4b, 6-9 & 17-27, with claims 1-5, 8-21 & 24-31 readable thereon, presented in Paper dated 10/16/06 is acknowledged.

2. Claims 6-7 & 22-23 are withdrawn from further consideration by the examiner, pursuant to 37 CFR 1.142(b) as being drawn to a non-elected species.

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The Title should provide a more detailed structural identification of the feature or features which distinguish the invention from the prior art.

The intended results produced by the structural differences can also be part of the content of the Title but should be made subordinate to the structural differences.

4. The following is a quotation of 37 CFR 1.71(a)-(c):

(a) The specification must include a written description of the invention or discovery and of the manner and process of making and using the same, and is required to be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which the invention or

Art Unit: 2627

discovery appertains, or with which it is most nearly connected, to make and use the same.

(b) The specification must set forth the precise invention for which a patent is solicited, in such manner as to distinguish it from other inventions and from what is old. It must describe completely a specific embodiment of the process, machine, manufacture, composition of matter or improvement invented, and must explain the mode of operation or principle whenever applicable. The best mode contemplated by the inventor of carrying out his invention must be set forth.

(C) In the case of an improvement, the specification must particularly point out the part or parts of the process, machine, manufacture, or composition of matter to which the improvement relates, and the description should be confined to the specific improvement and to such parts as necessarily cooperate with it or as may be necessary to a complete understanding or description of it.

The specification is objected to under 37 CFR 1.71 because the subject matter of Claims 12,28,30&31 is not fully disclosed.

The "longitudinal direction length" of claims 12&28, is not defined in the specification and/or shown in the drawings.

The steps indicated in claims 30-31 have not be explained in any further detail than that stipulated in the claims.

5. Claims 12,28,30&31 are rejected under 35 U.S.C. §112, first paragraph, as directed to subject matter which was not described in the specification in such full, clear, concise, and exact

Art Unit: 2627

terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention. See previous paragraph.

6. Claims 17&19 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following phrase lacks clear antecedent basis within the claim; i.e. either the particularly recited passage fails to be properly introduced prior to its appearance at that point in the claim or the structure recited in the passage is not an inherent part of or component of other previously recited structure: "its first surface" (Cl.17, line 3).

The instant claims appear to be claiming structure which relies on a frame of reference which has not been clearly established: "which is opposite to" (Cl.19, line 3).

An exhaustive search of indefinite and/or ambiguous language has not been attempted, but only exemplified in the preceding paragraphs. Therefore the applicant is responsible for a thorough review of all the claims to make corrections as appropriate.

Art Unit: 2627

7. The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-5,8-21,24-31 are rejected under 35 U.S.C. §103(a) as being unpatentable over the prior art as described in applicant's BACK GROUND OF THE INVENTION in view of Jiang (PN 6610591).

Applicant's BACK GROUND OF THE INVENTION details all of the method steps indicated in claims 1-3&29 or structure in claims 15-16 except for the "connections using solder balls with cores that will not melt even at a solder-melting temperature".

Jiang is cited to show that "solder balls with cores that will not melt even at a solder-melting temperature" is well known in the electronic arts. Jiang also discloses the other features indicated in claims 4,5,8-12,20,21,24-28 for example: claim 8, Jiang discloses in col.9, lines 33-37 the use of resin; for

Art Unit: 2627

claim 9, Jiang's col. 9, lines 48-49 documents the use of copper; the dimensions indicted in claim 12 are shown in Jiang's figure 1.

Moreover, steps of connecting terminal pads such as in claims 13,14 or structure as in claims 17-19 are also well known in the magnetic head/slider art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the solder balls disclosed by Jiang to perform the connections in a magnetic head slider.

Rationale: the process and/or structures for solder ball connecting disclosed in Jiang are simply alternative means of achieving the same results for the same purposes as those known in the prior art and therefore are readily substitutable equivalents.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Caletka (PN 7086147) discloses another process of solder ball connecting.

Art Unit: 2627

10. For a complete response applicant should identify how the claimed structure of his invention defines over **all** the art of record.

Moreover, where the applicant disagrees with the reasoning and/or application of the prior art on critical points of the claims, they should identify how the claimed structure of their invention defines over **all** the art of record not just the applied art.

Where applicant believes that the art is redundant and/or superfluous relative to the critical aspects of the claimed invention the applicant may simply state so in rebuttal summary.

11. If applicant has filed an information disclosure statement and this instant office action does not contain an initialed-off copy (or copies) of all such filed IDS's (or at least a comment to the disposition of such IDS'S in the body of the office action itself) applicant should apprise the examiner of such missing documentation [to the IDS's] in response to this office action so that the examiner can take appropriate action to supply same to the applicant.

Art Unit: 2627


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. J. HEINZ whose telephone number is (571) 272-7587. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DWAYNE BOST can be reached on (571)272-7023.

The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A. J. HEINZ
Primary Examiner
Art Unit 2627

A handwritten signature in cursive script, appearing to read "A. J. Heinz", written in black ink.